

ABSTRACT

Apparatus for *in-situ* monitoring of a process in a semiconductor wafer processing system consists of a process chamber having a dome, an enclosure disposed above the chamber, a process monitoring assembly positioned proximate the dome, an opening in the dome, and a window covering the opening. A portion of the apparatus supports the process monitoring assembly to establish a line-of-sight propagation path of monitoring beams from above the dome, through the window to the substrate to facilitate etch depth measurement without encountering interference from high power energy sources proximate the chamber. A method of fabricating a process monitoring apparatus consists of the steps of boring an opening into a dome, positioning the process monitoring assembly in proximity to the dome so as to allow a line-of-sight propagation path of monitoring beams from the process monitoring assembly to a wafer, and covering the opening with a window. The window is permanent or removable dependent upon the type of process monitoring assembly being used in the system.